

REMARKS/ARGUMENTS

Claims 5, 7-10, 12, 15-21 and 24 are pending. By this Amendment, claims 14 and 23 are cancelled without prejudice or disclaimer, and claims 5, 7-9, 12, 15-19 and 24 are amended. Support for the amendments to claims 5, 7-9, 12, 15-19 and 24 can be found, for example, in the present specification at paragraph [0016], and in previously presented claims 5, 7-9, 12, 15-19 and 24. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

Rejections Under 35 U.S.C. §103

A. Hewson and Shimosato

The Office Action rejects claims 5, 7-10, 12, 14-21, 23 and 24 under 35 U.S.C. §103(a) over U.S. Patent No. 6,239,082 to Hewson et al. ("Hewson") in view of U.S. Patent Application Publication No. US 2002/0166610 to Shimosato et al. ("Shimosato"). By this Amendment, claims 14 and 23 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 5 recites "[a] method for quenching a metallic material, comprising: adjusting the pressure on the surface of a quenching oil to 13-70 kPa; wherein the quenching oil consists of: (A) a base oil having a kinematic viscosity at 40 °C of 40 mm<sup>2</sup>/s or more; and (B) a vapor blanket breaking agent, the vapor blanket breaking agent being present in an amount of from 1 to 30% by mass based on a total mass of the quenching oil" (emphasis added).

Hewson and Shimosato do not disclose or suggest such a method.

As indicated above, the quenching oil used in the method of claim 5 includes only a base oil and a vapor blanket breaking agent. The component (b) of Hewson, for example, a succinic acid or succinic anhydride functionalized alkylene containing polymer or copolymer, is essential to the disclosed quenching oil and is neither a base oil nor a vapor blanket

breaking agent. *See Hewson*, column 1, lines 43 to 65. Accordingly, the quenching oil of *Hewson* does not correspond to the quenching oil employed in claim 5. In addition, one of ordinary skill in the art would not have modified the quenching oil of *Hewson* to eliminate an essential component. Accordingly, *Hewson* does not disclose or suggest the method of claim 5.

*Shimosato* does not remedy the deficiencies of *Hewson*. *Shimosato* is relied upon for its disclosure of reducing the surface pressure of a quenching oil to a particular range of values. *See* Office Action, page 3. However, *Shimosato*, like *Hewson*, fails to disclose employing a quenching oil having the particular composition required in claim 5.

As explained, claim 5 would not have been rendered obvious by *Hewson* and *Shimosato*. Claims 7-10, 12, 15-21 and 24 depend from claim 5 and, thus, also would not have been rendered obvious by *Hewson* and *Shimosato*. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Sweet and Shimosato

The Office Action rejects claims 5, 7-10, 12, 14-21, 23 and 24 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. US 2005/0039832 to Sweet et al. ("Sweet") in view of *Shimosato*. By this Amendment, claims 14 and 23 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 5 is set forth above. *Sweet* and *Shimosato* do not disclose or suggest such a method.

As indicated above, the quenching oil used in the method of claim 5 includes only a base oil and a vapor blanket breaking agent. The component (2) of *Sweet*, for example, an alkali metal salt of a saligenin derivative, is essential to the disclosed quenching oil and is

neither a base oil nor a vapor blanket breaking agent. *See Sweet*, paragraphs [0019] to [0026]. Accordingly, the quenching oil of *Sweet* does not correspond to the quenching oil employed in claim 5. In addition, one of ordinary skill in the art would not have modified the quenching oil of *Sweet* to eliminate an essential component. Accordingly, *Sweet* does not disclose or suggest the method of claim 5.

*Shimosato* does not remedy the deficiencies of *Sweet*. *Shimosato* is relied upon for its disclosure of reducing the surface pressure of a quenching oil to a particular range of values. *See* Office Action, page 5. However, *Shimosato*, like *Sweet*, fails to disclose employing a quenching oil having the particular composition required in claim 5.

As explained, claim 5 would not have been rendered obvious by *Sweet* and *Shimosato*. Claims 7-10, 12, 15-21 and 24 depend from claim 5 and, thus, also would not have been rendered obvious by *Sweet* and *Shimosato*. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. Ichitani and Shimosato

The Office Action rejects claims 5, 7-10, 12, 14-21, 23 and 24 under 35 U.S.C. §103(a) over U.S. Patent No. 7,347,927 to Ichitani et al. ("Ichitani") in view of Shimosato. By this Amendment, claims 14 and 23 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 5 is set forth above. Ichitani and Shimosato do not disclose or suggest such a method.

As indicated above, the quenching oil used in the method of claim 5 includes only a base oil and a vapor blanket breaking agent. The quenching oil of Ichitani includes a low viscosity base oil and a high viscosity base oil as essential components. *See Ichitani*, column 2, lines 6 to 13. Accordingly, the quenching oil of Ichitani does not correspond to the

quenching oil employed in claim 5. In addition, one of ordinary skill in the art would not have modified the quenching oil of Ichitani to eliminate one or the other to those essential components. Accordingly, Ichitani does not disclose or suggest the method of claim 5.

Shimosato does not remedy the deficiencies of Ichitani. Shimosato is relied upon for its disclosure of reducing the surface pressure of a quenching oil to a particular range of values. *See* Office Action, page 7. However, Shimosato, like Ichitani, fails to disclose employing a quenching oil having the particular composition required in claim 5.

As explained, claim 5 would not have been rendered obvious by Ichitani and Shimosato. Claims 7-10, 12, 15-21 and 24 depend from claim 5 and, thus, also would not have been rendered obvious by Ichitani and Shimosato. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

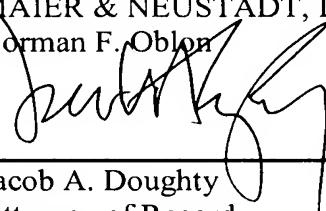
### Conclusion

For the foregoing reasons, Applicants submit that claims 5, 7-10, 12, 15-21 and 24 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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